

University of Hartford/ University of Connecticut Collaborative Nuclear Fellowship Program Applied Research in Radiation Damage and Mitigation

Executive Summary:

The proposed program will be a collaborative effort between the Mechanical Engineering Department at the University of Hartford and the Mechanical Engineering Department at the University of Connecticut. Each institution of higher education will support one graduate student per year within the scope of the program. Our efforts will combine and build upon the expertise of the PI's (nuclear power plant experience and nuclear materials research and education) to develop meaningful and challenging projects for the student fellows.

The program will address an urgent need for nuclear engineering education and expertise, particularly in the local area. Within the state of Connecticut, nuclear reactors produce more than 40% of the electricity, and the Electric Boat division of General Dynamics leads the nation's nuclear submarine effort; yet, there is no specialized nuclear engineering education program in the state. Combining the best expertise in nuclear engineering available within Connecticut, the proposed program will focus on the mechanical integrity of reactor coolant pressure boundary materials and components under the radiation field present in Pressurized Water Reactors (PWR). The focus area will address the urgent needs of multiple industry partners - including General Dynamics Electric Boat, and Westinghouse Electric LLC - and strengthen our initiative in establishing a nuclear engineering program (a comprehensive concentration within Mechanical Engineering in the first stage) in the state of Connecticut. In addition, the program will provide summer internships for the fellowship students at the two corporate partner sites (all within Connecticut, all within approximately one-hour drive from respective campus sites). The summer internship positions will provide the students the ability to relate their theoretical knowledge into applied engineering problems.

Principal Investigator: Thomas Filburn, Filburn@hartford.edu